

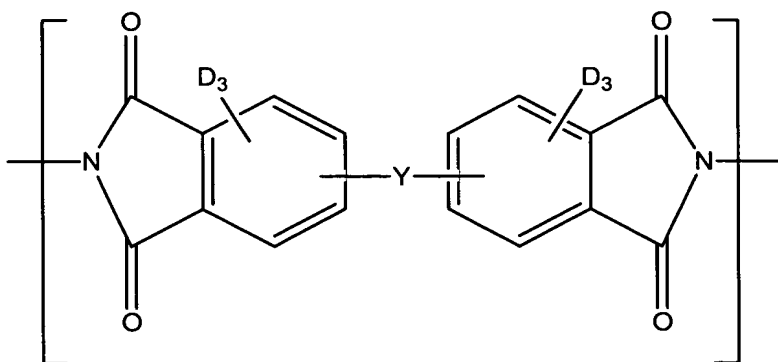
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original) A deuterated polyimide, the backbone of which comprises an alternation between:

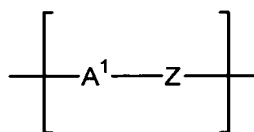
- at least one repeat unit corresponding to the following formula (I):



(I)

in which:

- Y represents a single bond or a spacer group; and
- at least one repeat unit corresponding to the following formula (II):



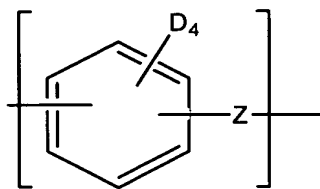
(II)

in which:

- A¹ represents a perdeuterated aromatic group comprising from 6 to 10 carbon atoms; and
- Z represents a single bond or a group chosen from -O-C₆D₄-, -CO-C₆D₄- and -C₆D₄-.

Claim 2 (original) The deuterated polyimide as claimed in claim 1, in which Y, when Y is a spacer group, is a group chosen from -O-, -CD₂-, -CO-, -SO₂- or -C₆D₄-.

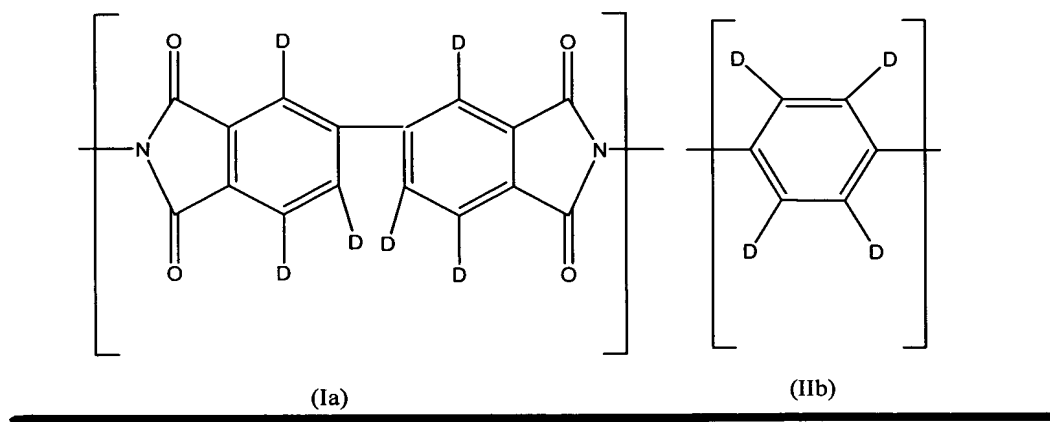
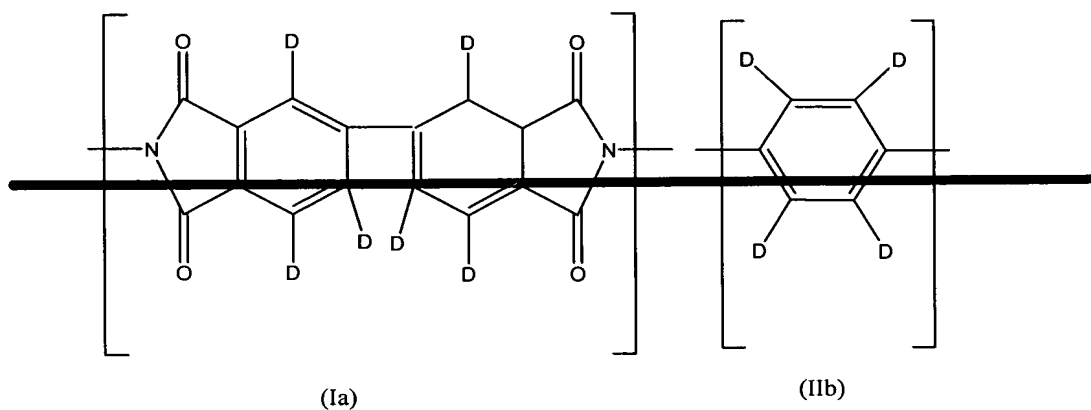
Claim 3 (previously presented) The deuterated polyimide as claimed in claim 1, in which the repeat unit in accordance with the formula (II) is a repeat unit of following formula (IIa):



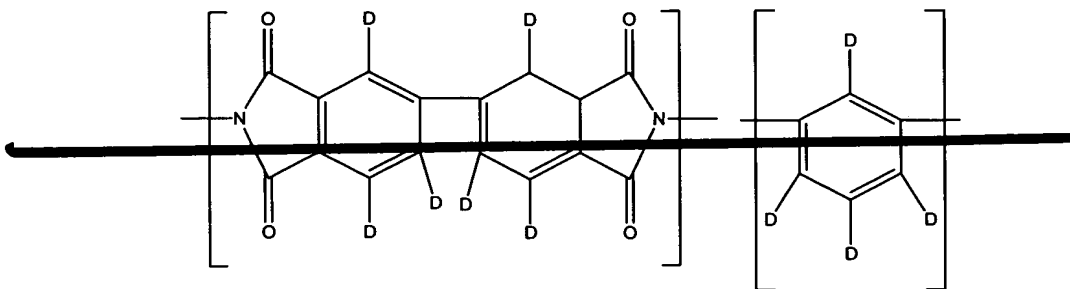
in which Z corresponds to the same definition as that given in claim 1.

Claim 4 (currently amended) The deuterated polyimide as claimed in claim 1, chosen from the group consisting of the polyimides chosen from:

- polyimides comprising a repeat unit of following formula (Ia) and a repeat unit of following formula (IIb):

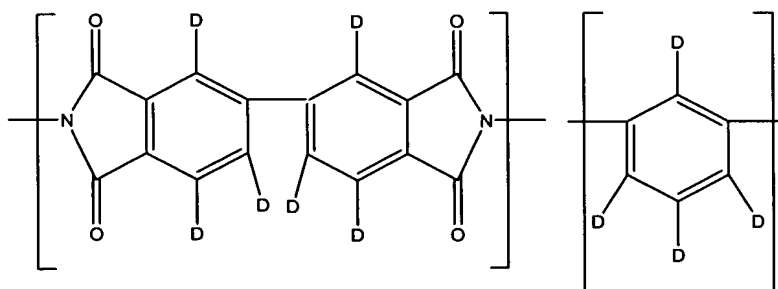


- polyimides comprising a repeat unit of following formula (Ia) and a repeat unit of following formula (IIc):



(Ia)

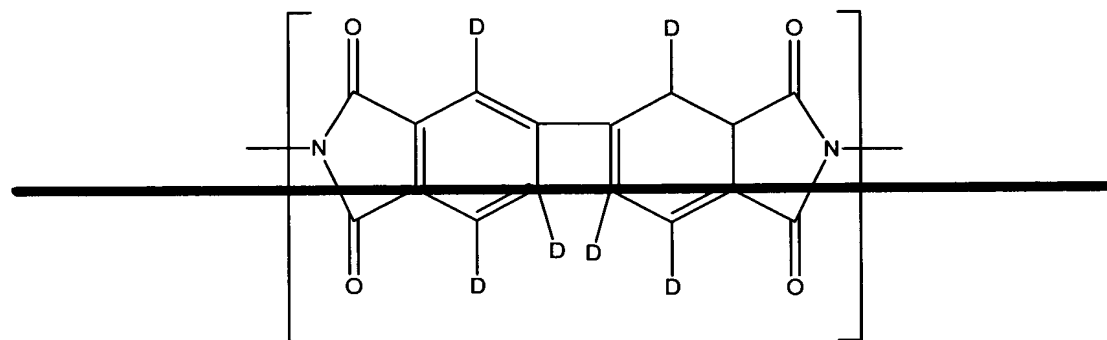
(IIc)



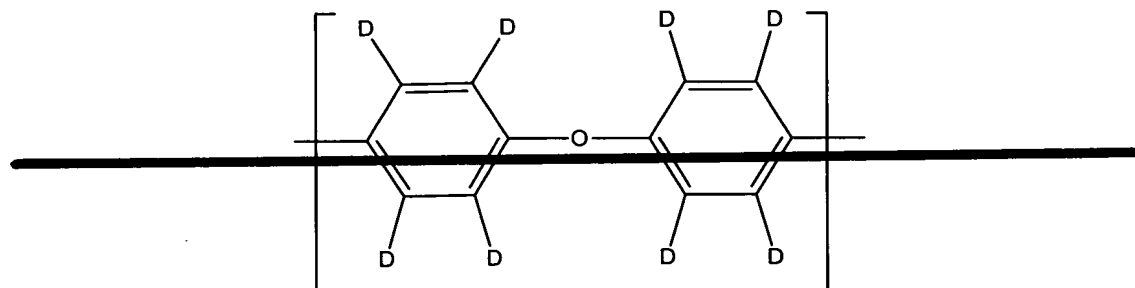
(Ia)

(IIc)

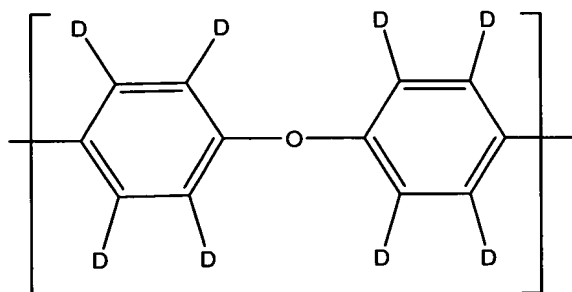
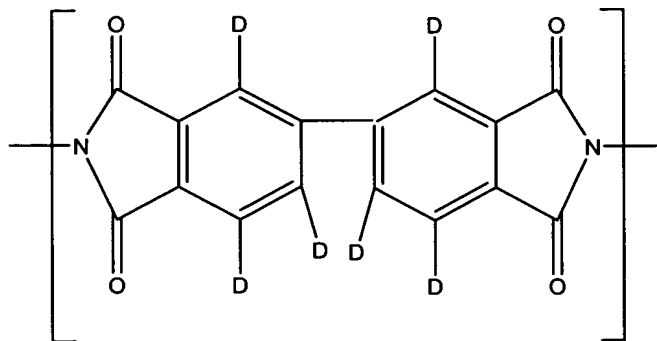
- polyimides comprising a repeat unit of following formula (Ia) and a repeat unit of following formula (IIc):



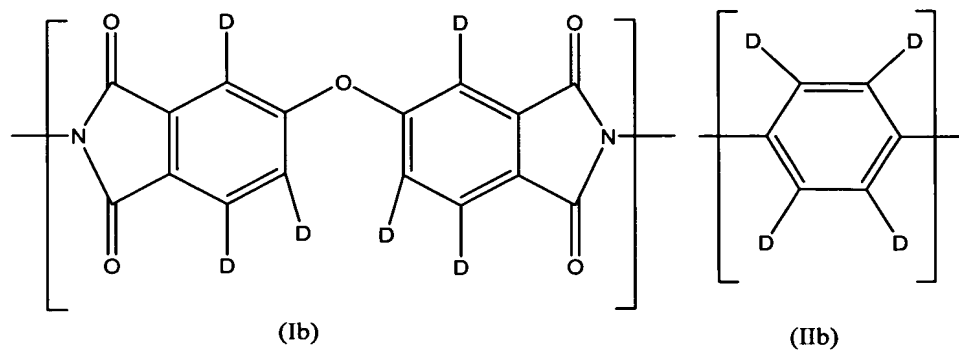
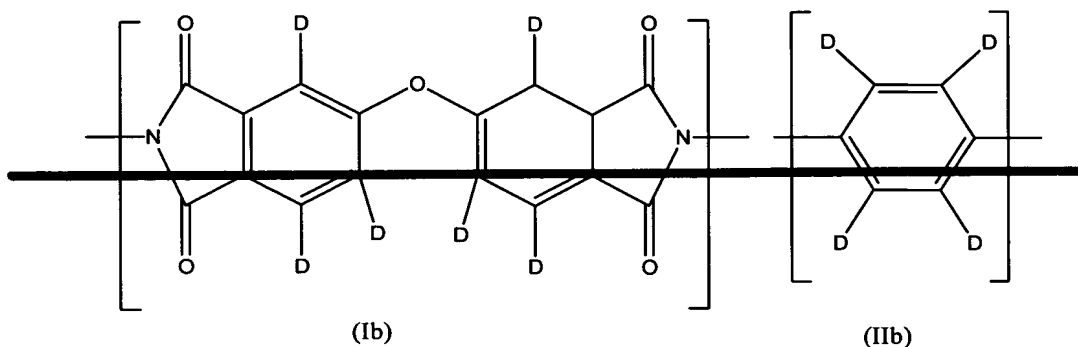
(Ia)



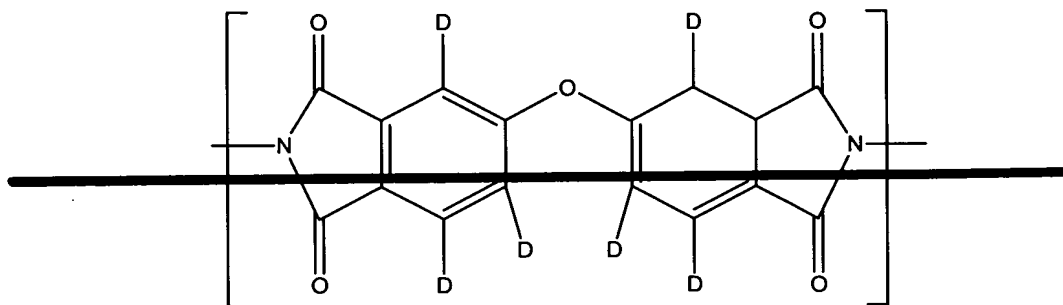
(IIc)



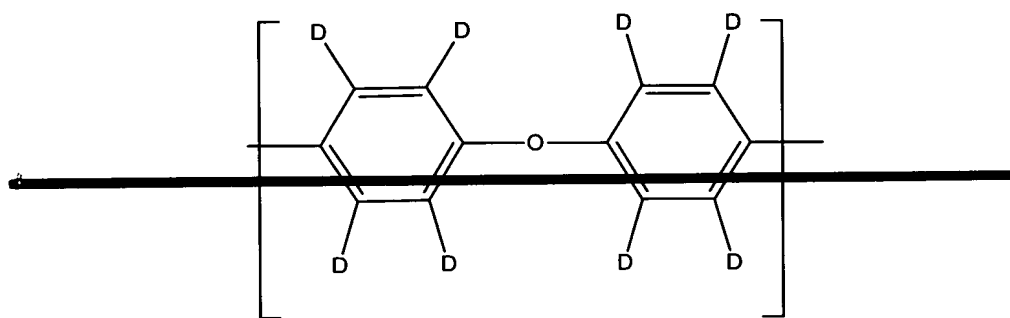
- polyimides comprising a repeat unit of following formula (Ib) and a repeat unit of following formula (IIb):



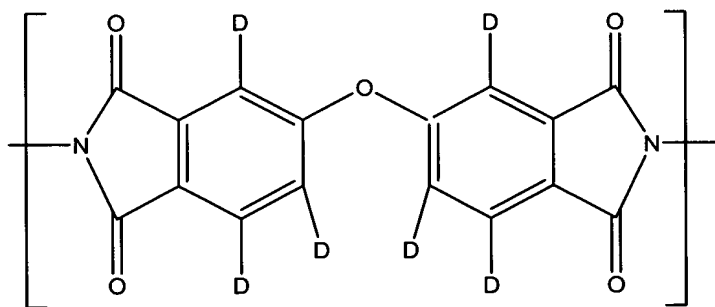
- polyimides comprising a repeat unit of following formula (Ib) and a repeat unit of following formula (IIa):



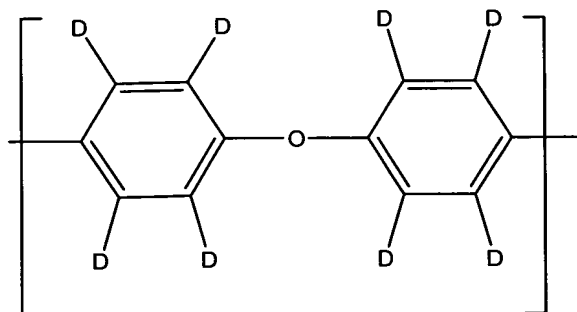
(Ib)



(IIa)

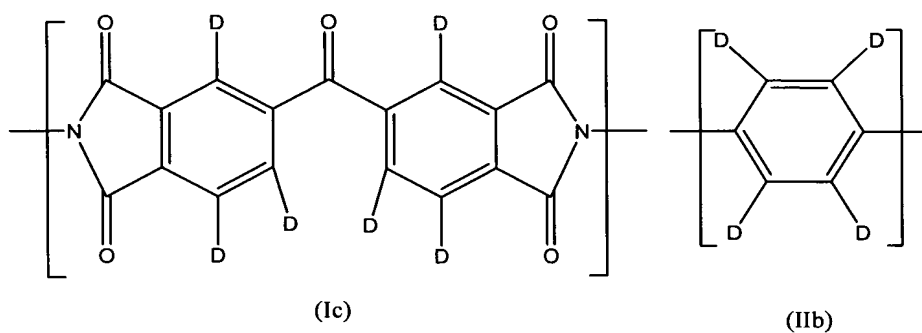
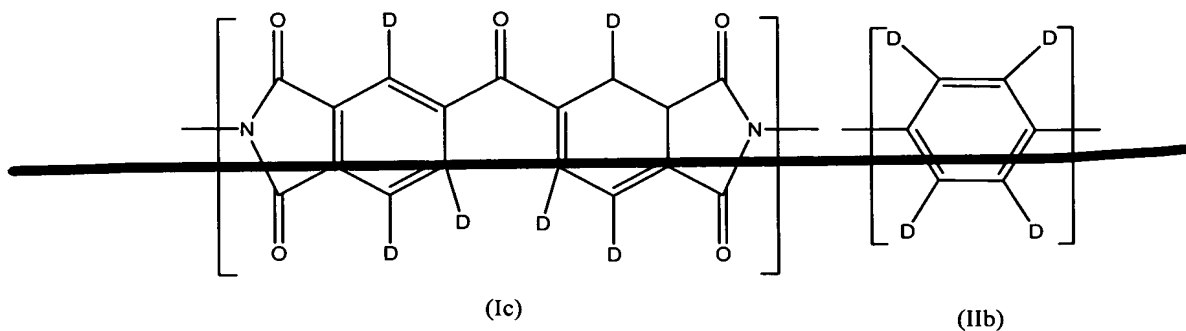


(Ib)

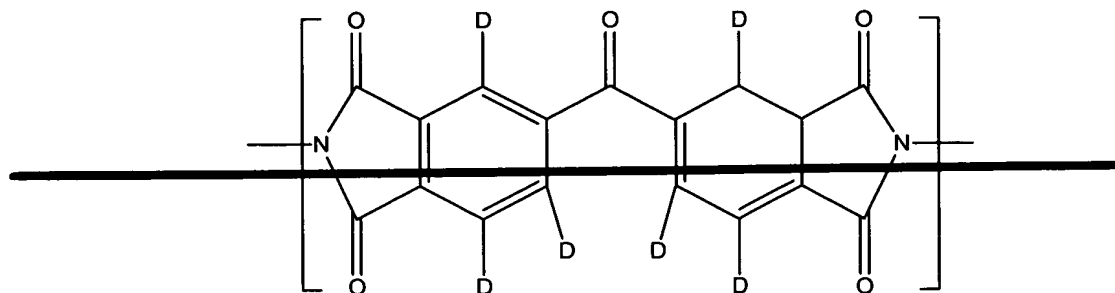


(IIa)

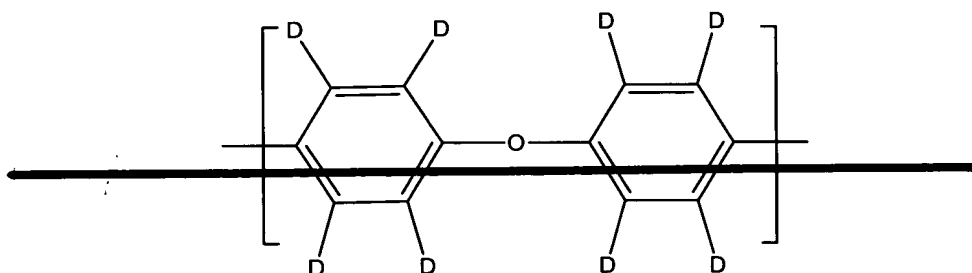
- polyimides comprising a repeat unit of following formula (Ic) and a repeat unit of following formula (IIb):



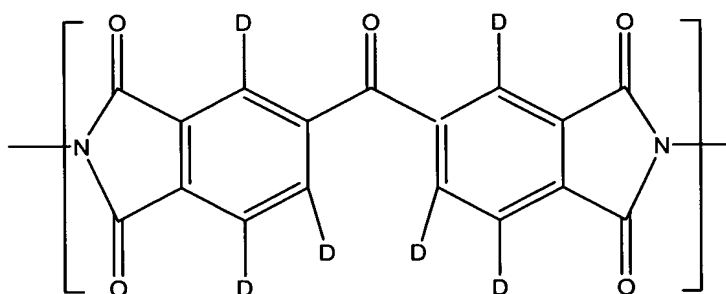
- polyimides comprising a repeat unit of following formula (Ic) and a repeat unit of following formula (IIId):



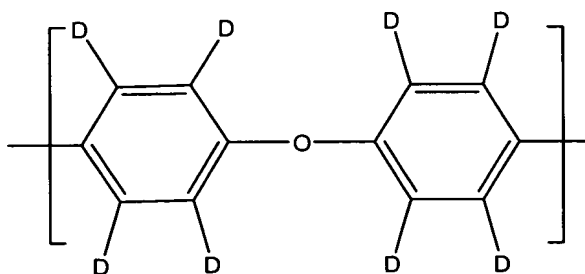
(Ic)



(IIId)

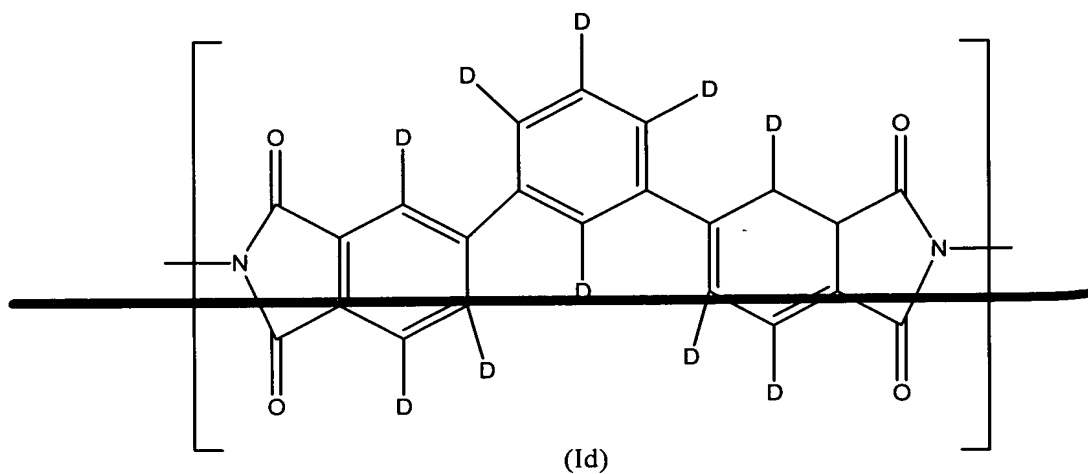


(Ic)

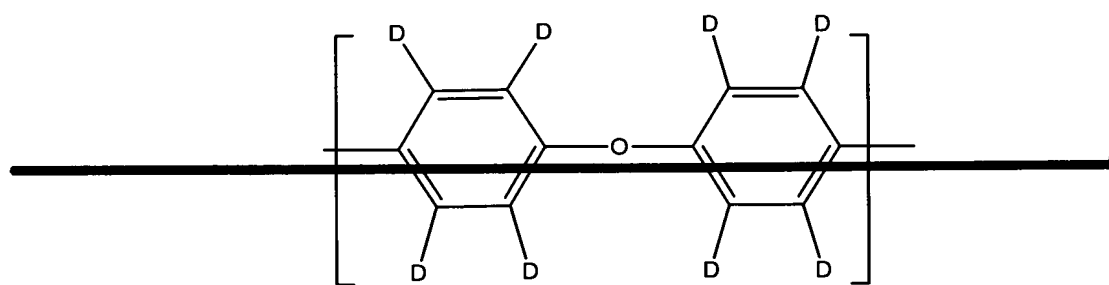


(IIId)

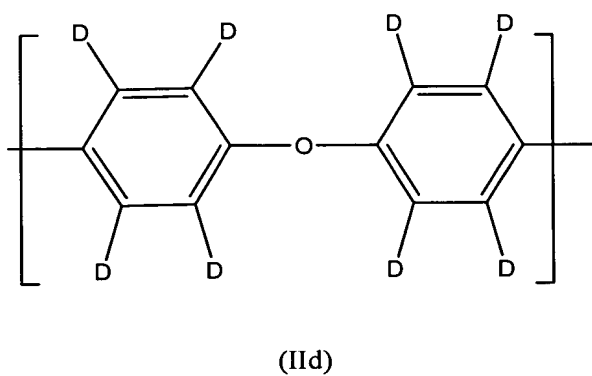
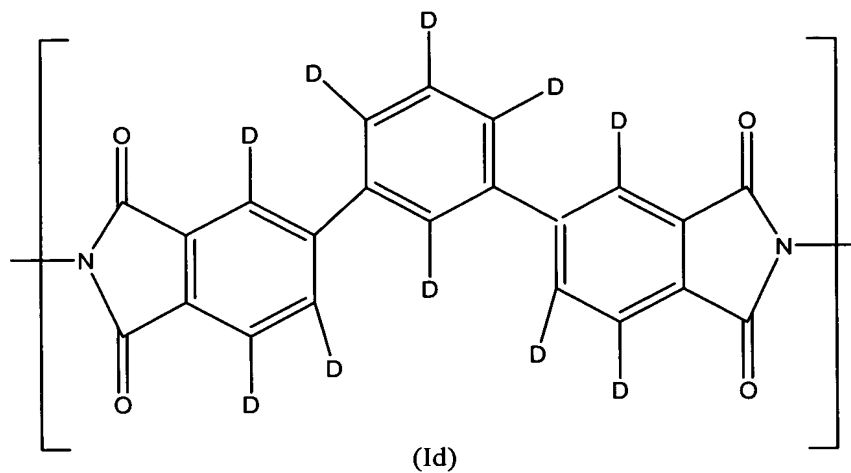
- polyimides comprising a repeat unit of following formula (Ic) and a repeat unit of following formula (IIId):



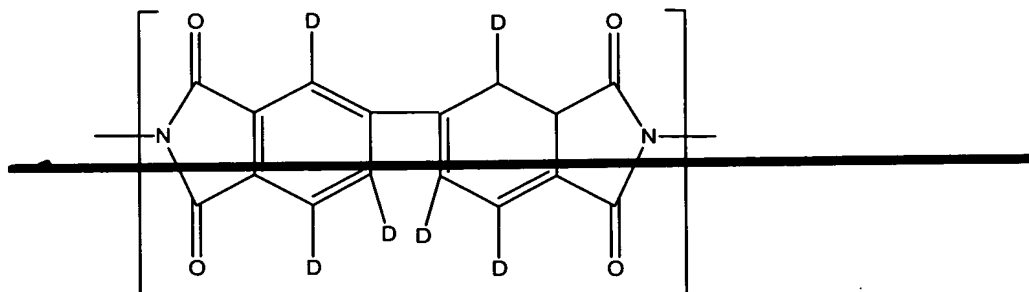
(Id)



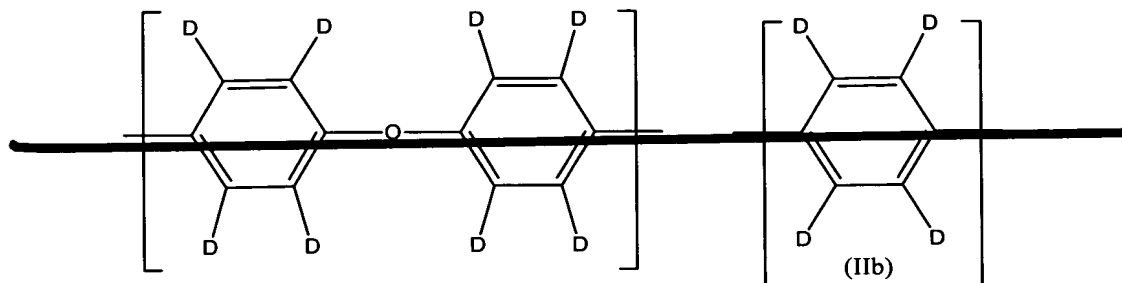
(IIId)



- polyimides comprising a repeat unit of following formula (Ia), a repeat unit of following formula (IIb) and a repeat unit of following formula (IIId):

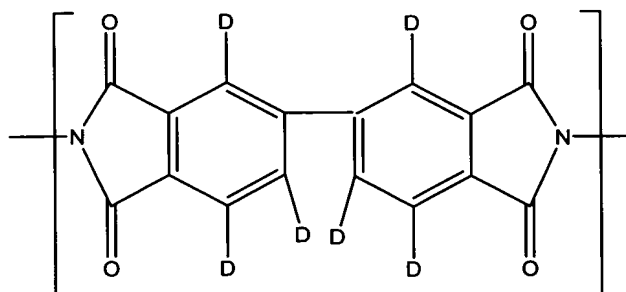


(Ia)

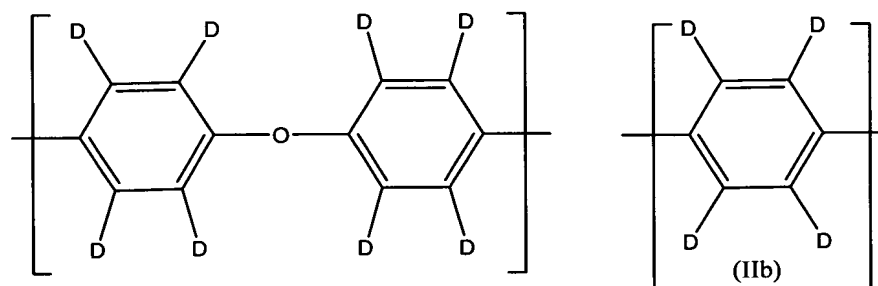


(IIb)

(IIc)



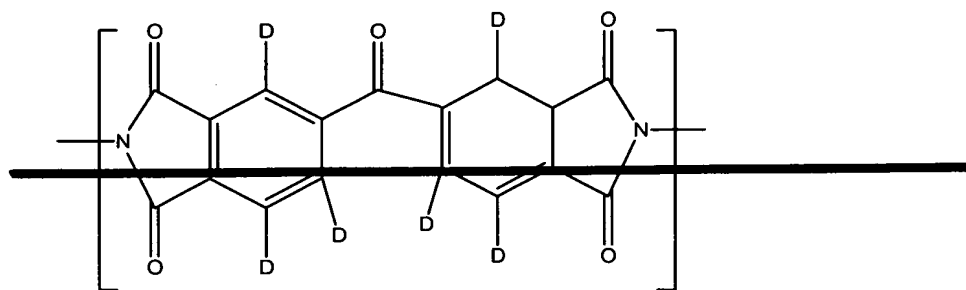
(Ia)



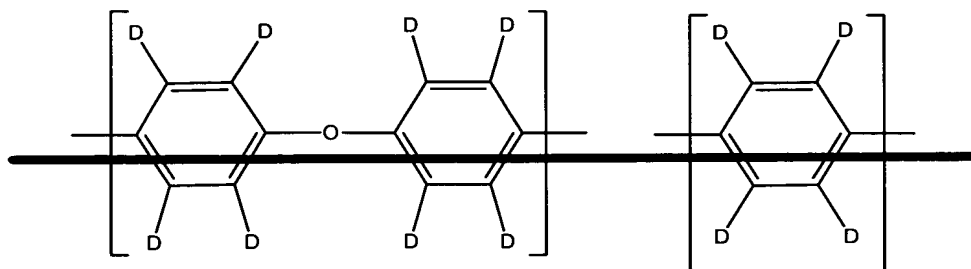
(IIb)

(IIc)

- polyimides comprising a repeat unit of following formula (Ic), a repeat unit of following formula (IIb) and a repeat unit of following formula (IIc):

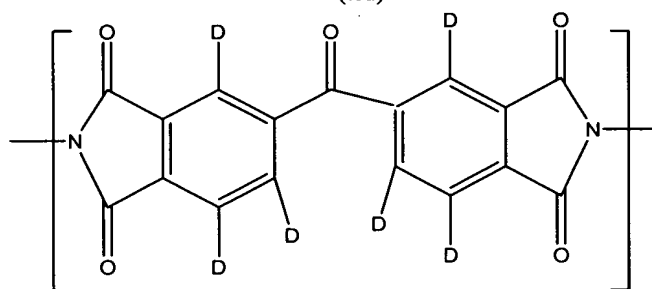


(Ic)

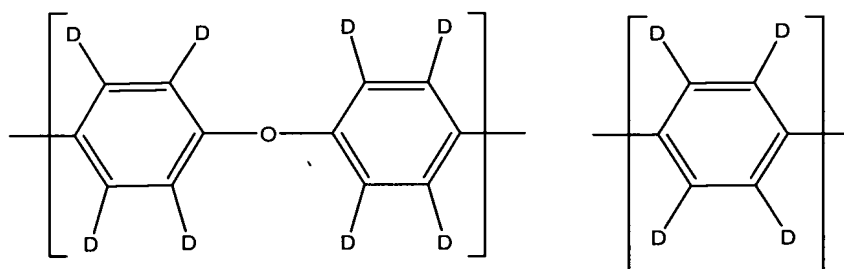


(IIc)

(IIb)



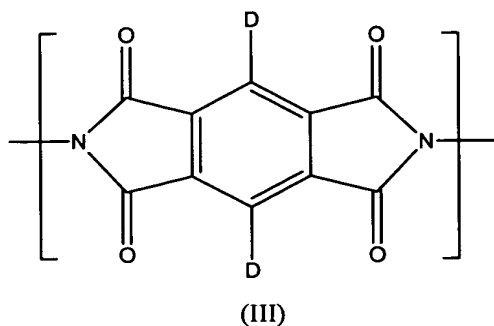
(Ic)



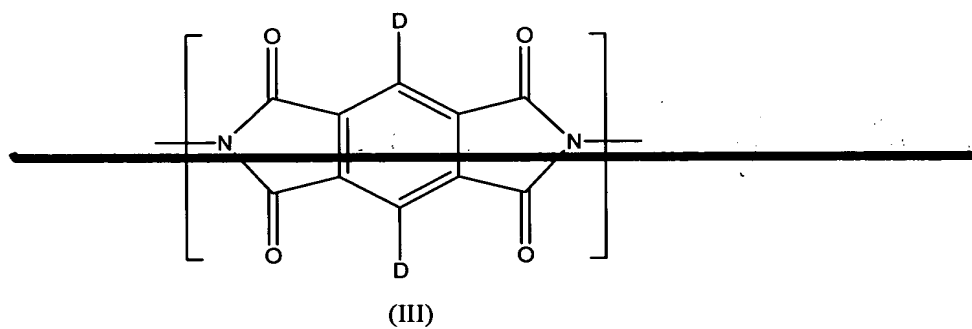
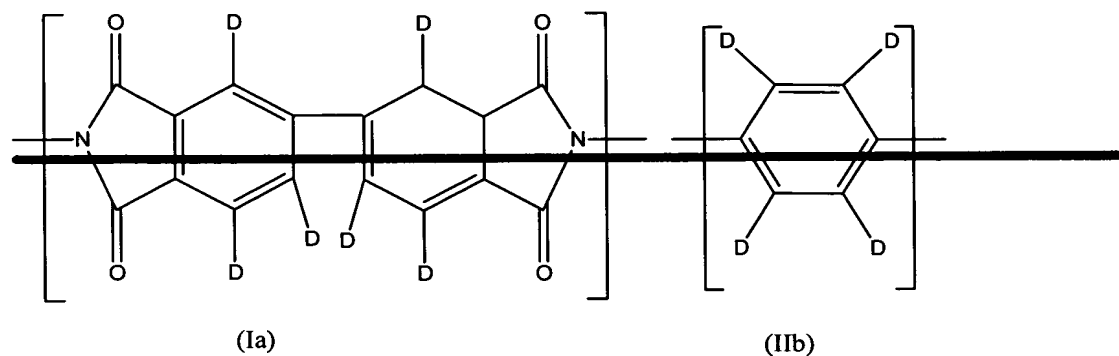
(IIc)

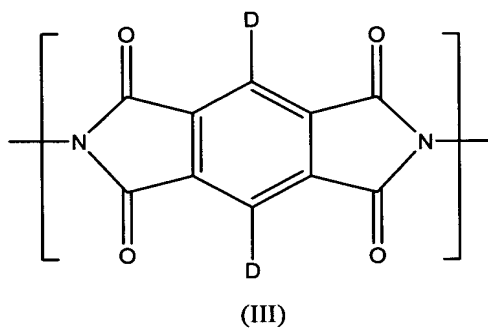
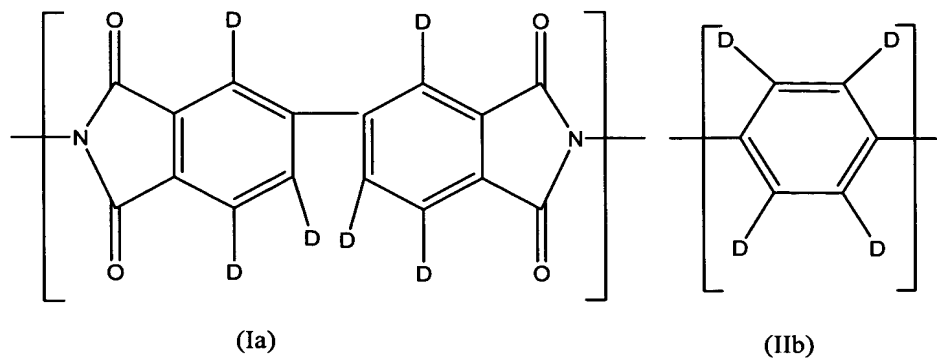
(IIb)

Claim 5 (previously presented) The deuterated polyimide as claimed in claim 1, additionally comprising a unit corresponding to the following formula (III):



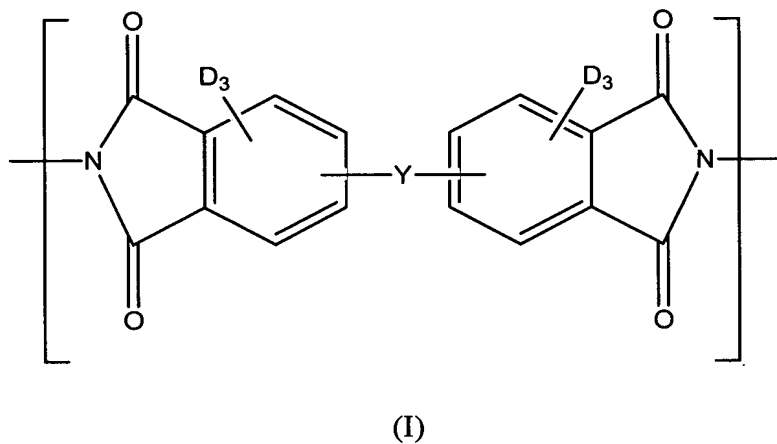
Claim 6 (currently amended) The deuterated polyimide as claimed in claim 5, comprising a repeat unit of following formula (Ia), a repeat unit of following formula (IIb) and a repeat unit of following formula (III):





Claim 7 (previously presented) A process for the preparation of a deuterated polyimide, the backbone of which comprises an alternation between:

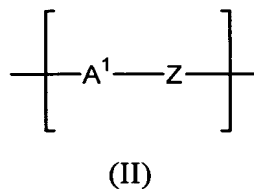
- at least one repeat unit corresponding to the following formula (I):



in which:

- Y represents a single bond or a spacer group; and

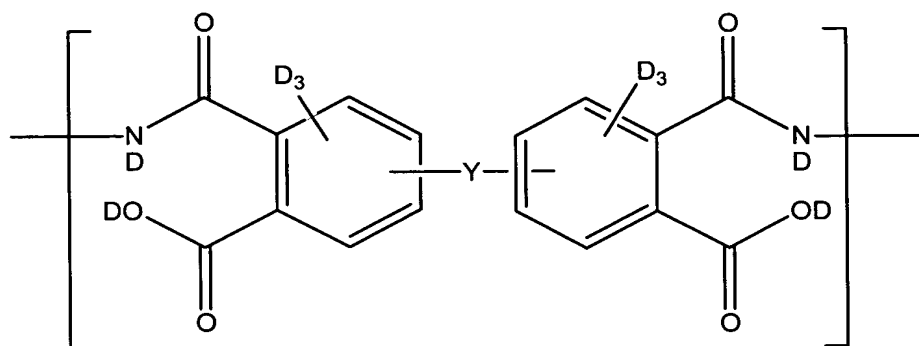
- at least one repeat unit corresponding to the following formula (II):



in which:

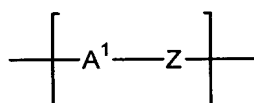
- A¹ represents a perdeuterated aromatic group comprising from 6 to 10 carbon atoms; and
- Z represents a single bond or a group chosen from -O-C₆D₄-, -CO-C₆D₄- and -C₆D₄-;

said process comprising a stage consisting in treating, by heating at an appropriate temperature, a solution of a poly(amide-acid), the backbone of which comprises an alternation between at least one repeat unit of following formula (IV):



(IV)

in which Y corresponds to the same definition as that given above; and
 at least one repeat unit of formula (II):

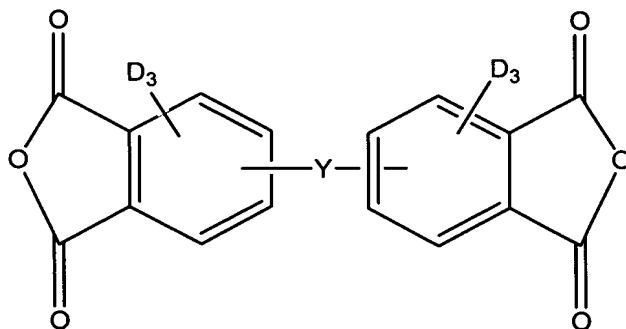


(II)

in which A¹ and Z correspond to the same definitions as those given above,
 the appropriate heating temperature being determined so as to obtain complete imidization of
 said poly(amide-acid).

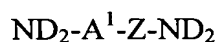
Claim 8 (original) The preparation process as claimed in claim 7, in which the appropriate heating temperature is a temperature ranging from 80 to 400°C.

Claim 9 (previously presented) The preparation process as claimed in claim 7, in which the poly(amide-acid) solution is prepared by polycondensation, in a solvent, of at least one monomer of following formula (V):



(V)

in which Y corresponds to the same definition as that given in claim 7, and
of at least one monomer of following formula (VI):

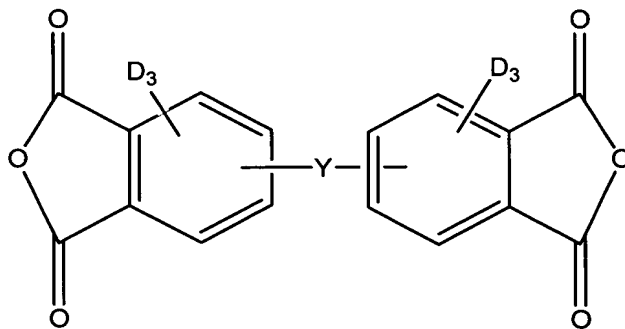


(VI)

in which A¹ and Z correspond to the same definitions as those given in claim 7.

Claim 10 (previously presented) The preparation process as claimed in claim 7, in which the solvent is a dipolar aprotic solvent chosen from the group consisting of N-methylpyrrolidone (NMP), dimethylformamide (DMF) and dimethylacetamide (DMAC).

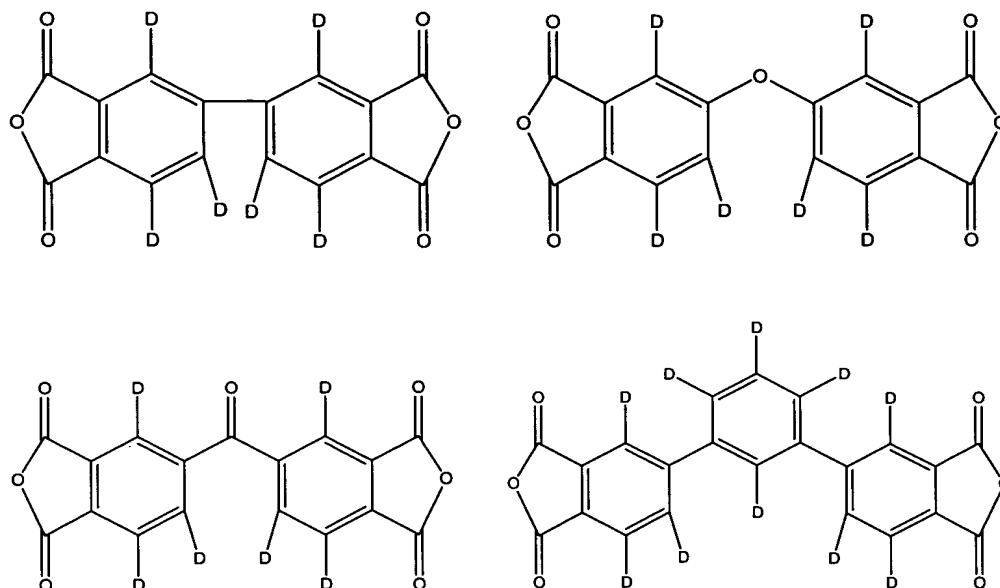
Claim 11 (previously presented) A deuterated dianhydride monomer corresponding to the following formula (V):



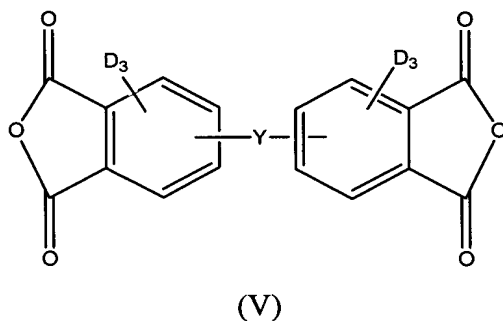
(V)

in which Y represents a single bond or a spacer group.

Claim 12 (original) The deuterated dianhydride monomers corresponding to one of the following formulae:

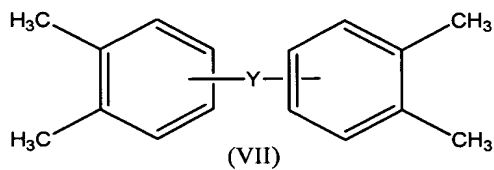


Claim 13 (previously presented) A process for the preparation of monomers of formula (V):

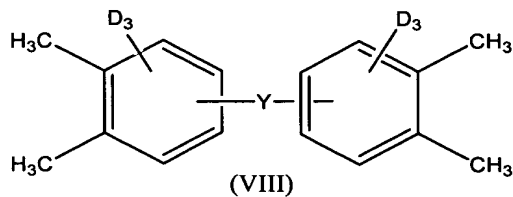


in which Y represents a single bond or a spacer group, said process successively comprising the following stages:

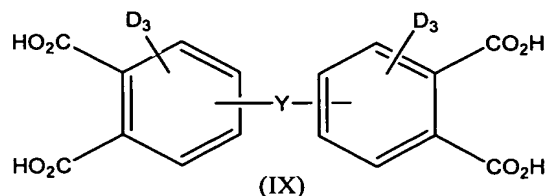
- subjecting a compound of formula (VII):



to deuteration, so as to obtain a compound of formula (VIII):

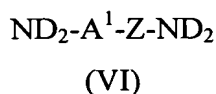


- subjecting the compound obtained above to oxidation, so as to obtain a compound of formula (IX):



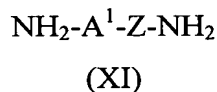
- subjecting the compound obtained above to cyclodehydration, so as to obtain the compound of formula (V).

Claim 14 (previously presented) A process for the preparation of deuterated diamine monomers of formula (VI):

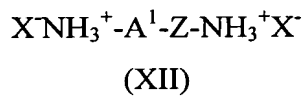


in which A^1 represents a perdeuterated aromatic group comprising from 6 to 10 carbon atoms; and Z represents a single bond or a group chosen from $\text{-O-C}_6\text{D}_4\text{-}$, $\text{-CO-C}_6\text{D}_4\text{-}$ and $\text{-C}_6\text{D}_4\text{-}$, said process successively comprising the following stages:

- reacting a compound of formula (XI):



with an inorganic acid of formula HX, so as to obtain an ammonium salt of formula (XII):

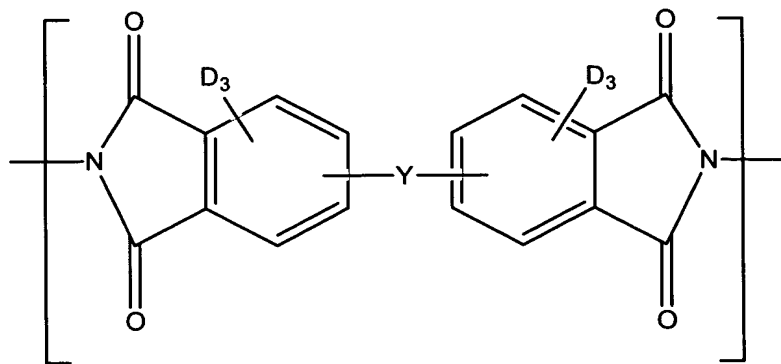


in which X represents a halide;

- reacting said ammonium salt with deuterated water under an appropriate pressure, followed by reacting with a base, so as to obtain the monomer of formula (VI).

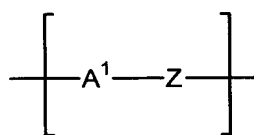
Claim 15 (previously presented) A film based on a deuterated polyimide, the backbone of which comprises an alternation between:

- at least one repeat unit corresponding to the following formula (I):



in which:

- Y represents a single bond or a spacer group; and
- at least one repeat unit corresponding to the following formula (II):

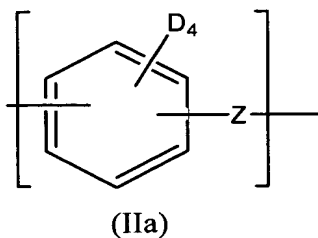


in which:

- A¹ represents a perdeuterated aromatic group comprising from 6 to 10 carbon atoms; and
- Z represents a single bond or a group chosen from -O-C₆D₄-, -CO-C₆D₄- and -C₆D₄-.

Claim 16 (canceled)

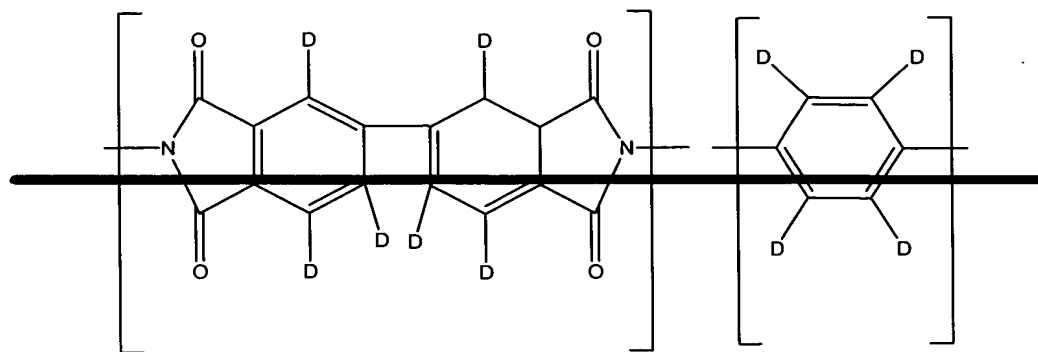
Claim 17 (previously presented) The deuterated polyimide as claimed in claim 2, in which the repeat unit in accordance with the formula (II) is a repeat unit of following formula (IIa):



in which Z corresponds to the same definition as that given in claim 1.

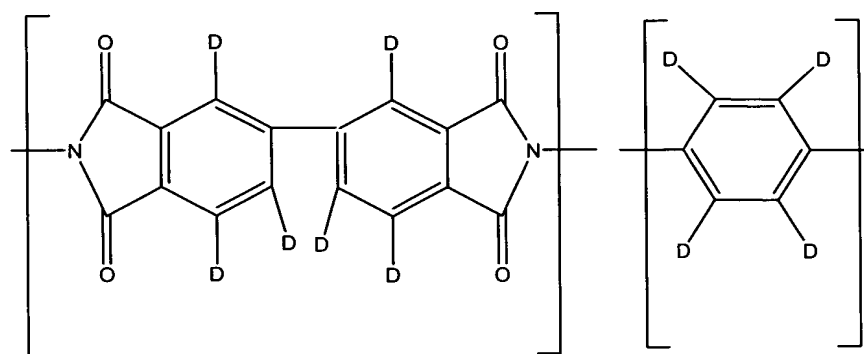
Claim 18 (currently amended) The deuterated polyimide as claimed in claim 3, chosen from the group consisting of the polyimides chosen from:

- polyimides comprising a repeat unit of following formula (Ia) and a repeat unit of following formula (IIb):



(Ia)

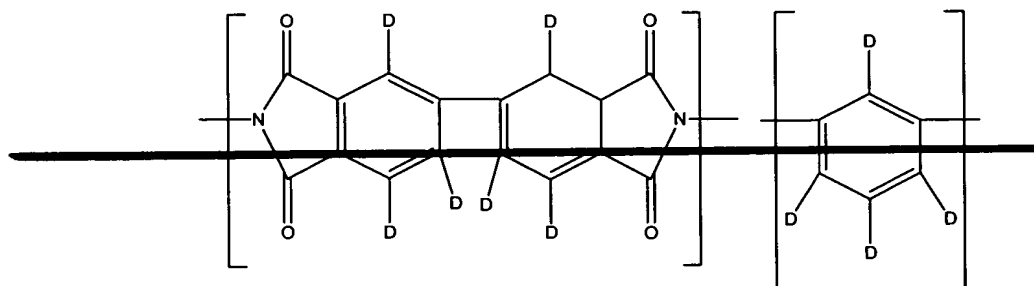
(IIb)



(Ia)

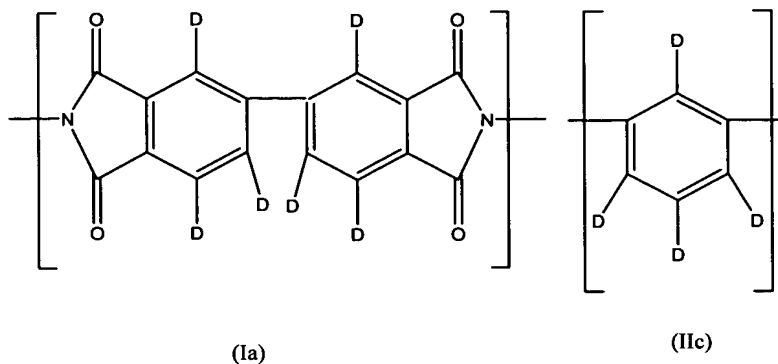
(IIb)

- polyimides comprising a repeat unit of following formula (Ia) and a repeat unit of following formula (IIc):

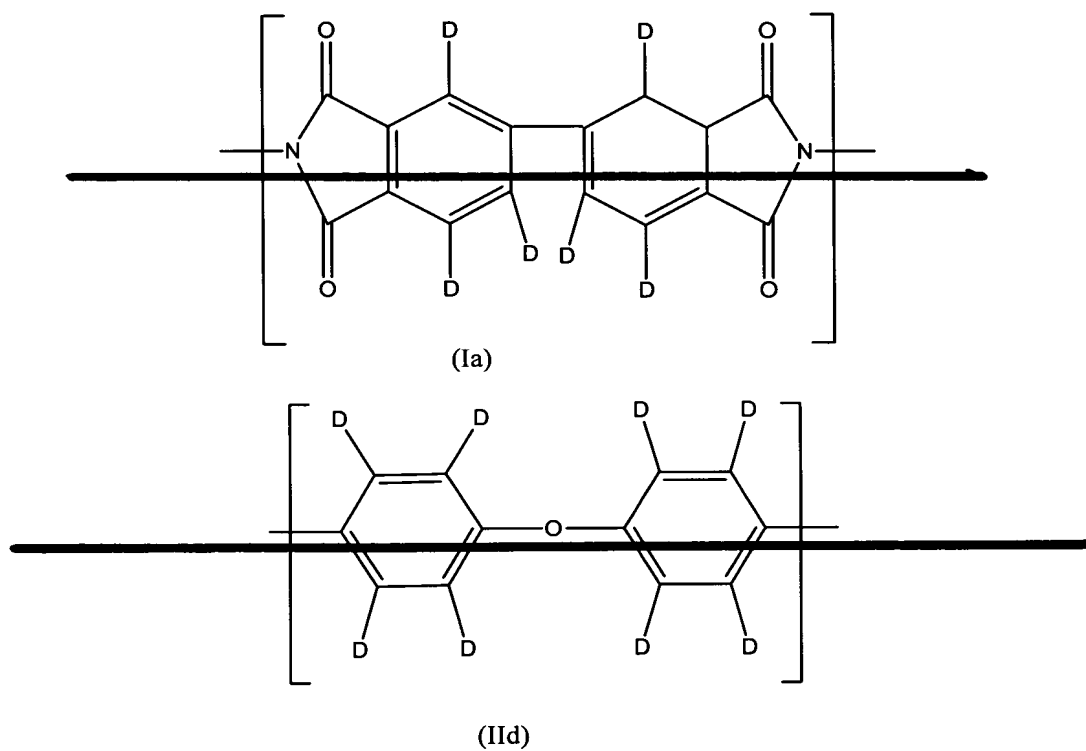


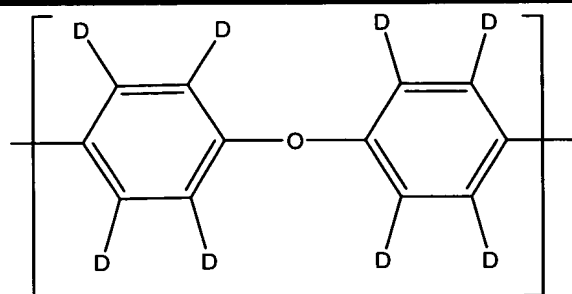
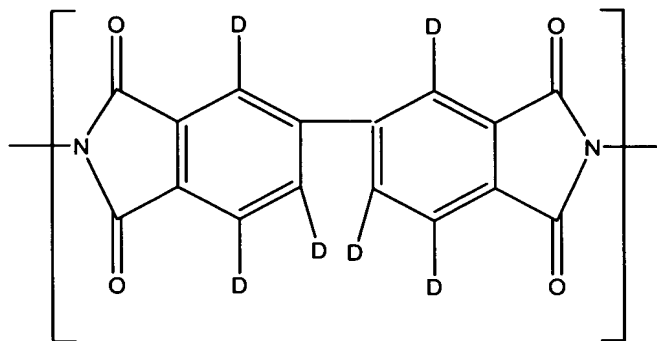
(Ia)

(IIc)

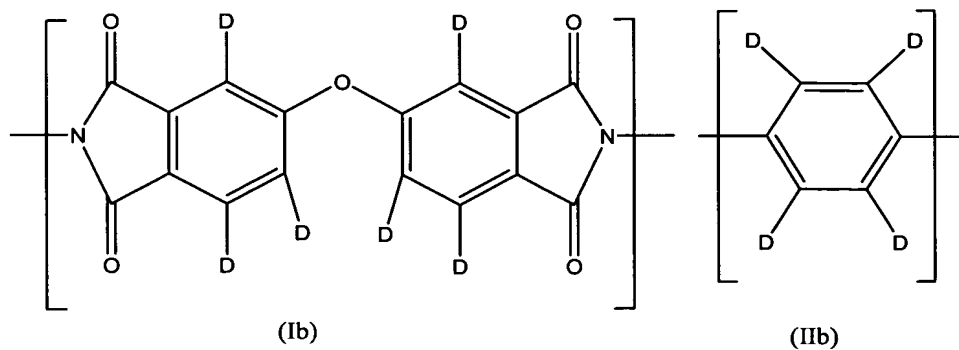
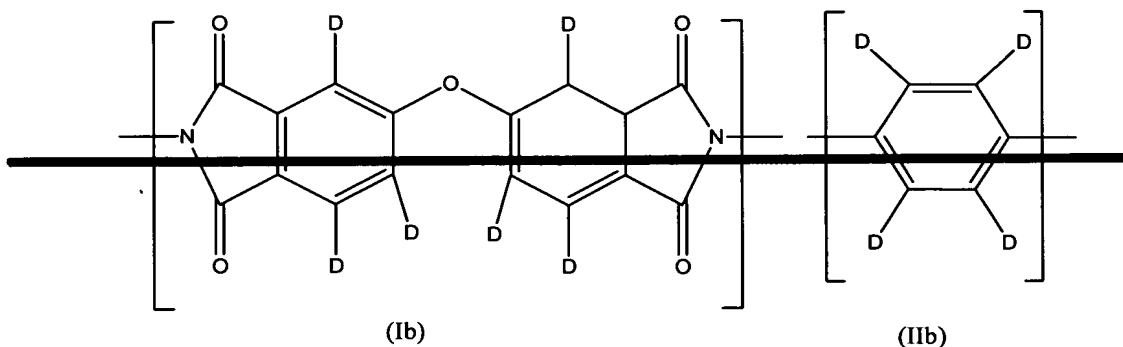


- polyimides comprising a repeat unit of following formula (Ia) and a repeat unit of following formula (IIc):

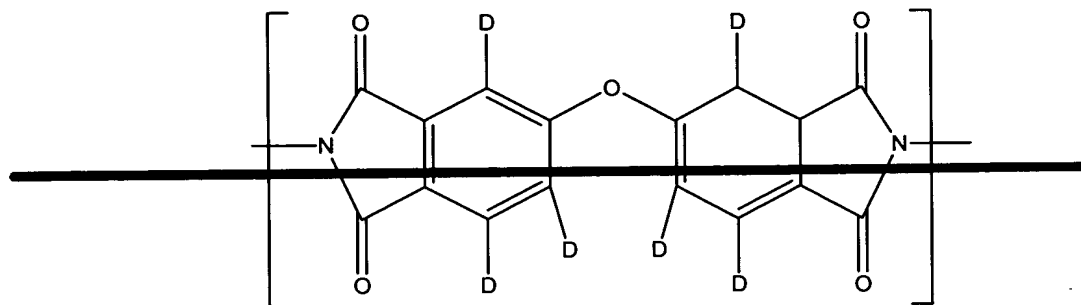




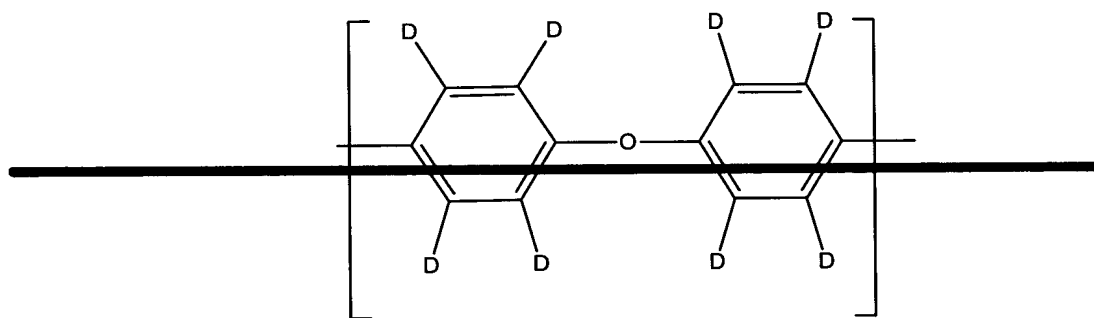
- polyimides comprising a repeat unit of following formula (Ib) and a repeat unit of following formula (IIb):



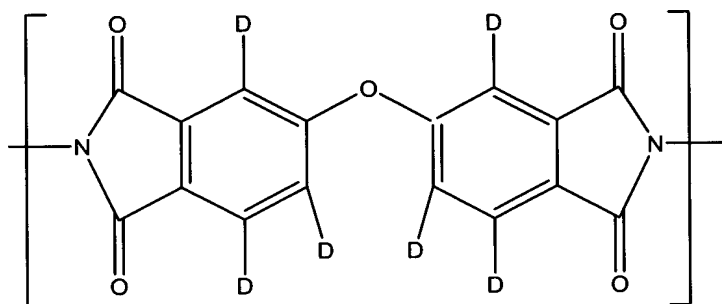
- polyimides comprising a repeat unit of following formula (Ib) and a repeat unit of following formula (IIa):



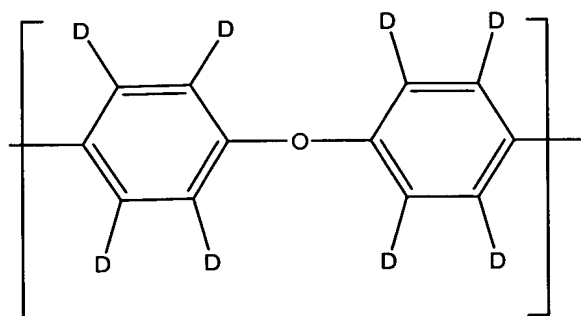
(Ib)



(IIa)

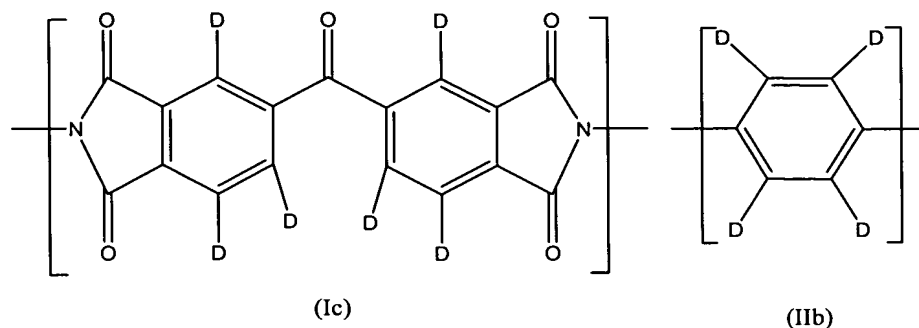
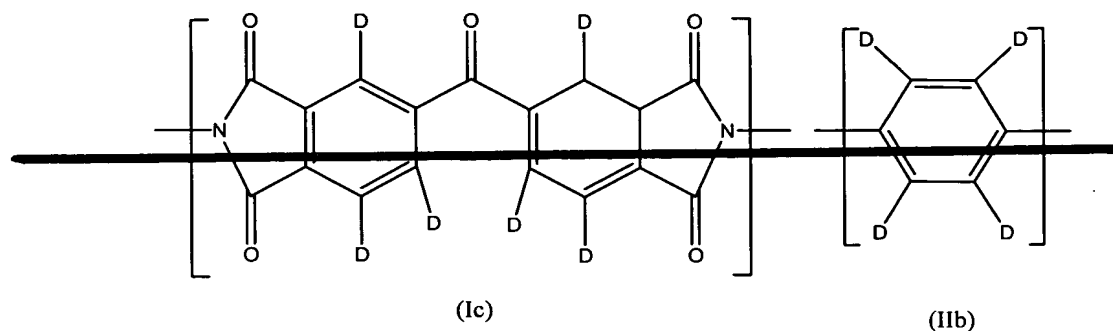


(Ib)

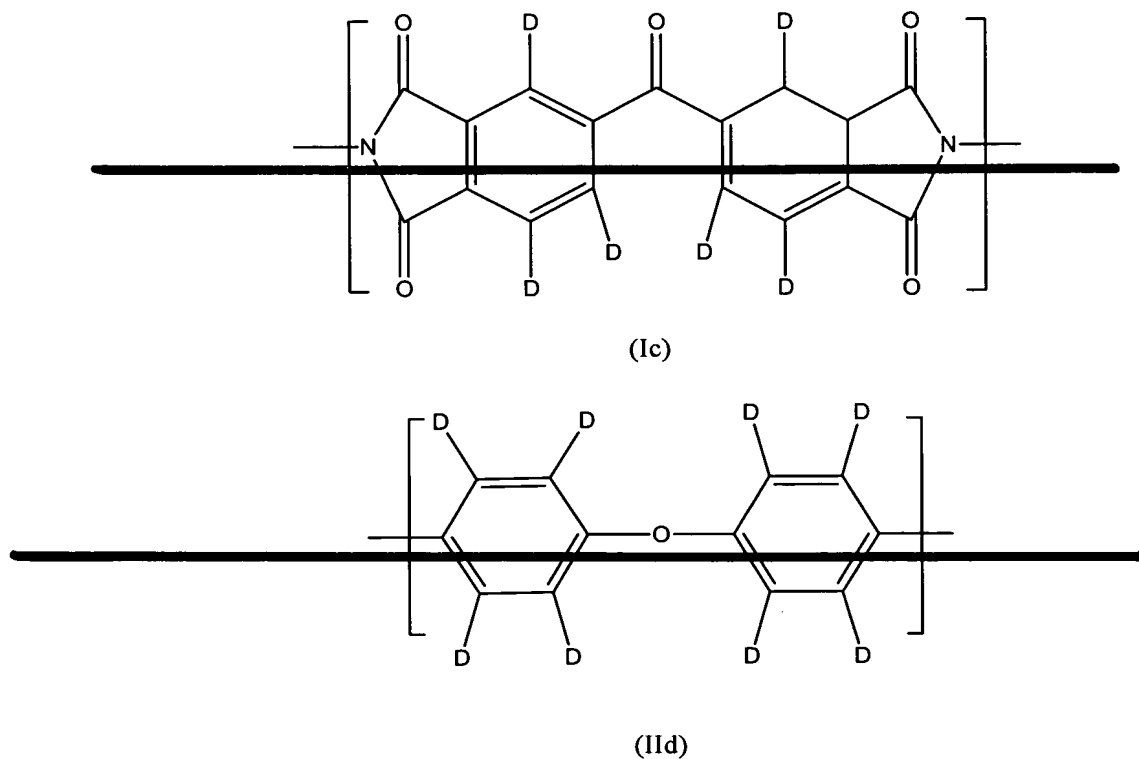


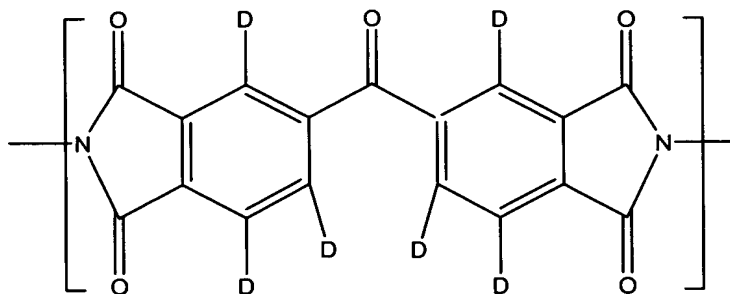
(IIa)

- polyimides comprising a repeat unit of following formula (Ic) and a repeat unit of following formula (IIb):

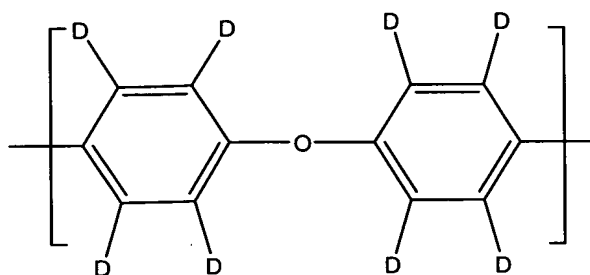


- polyimides comprising a repeat unit of following formula (Ic) and a repeat unit of following formula (IIId):



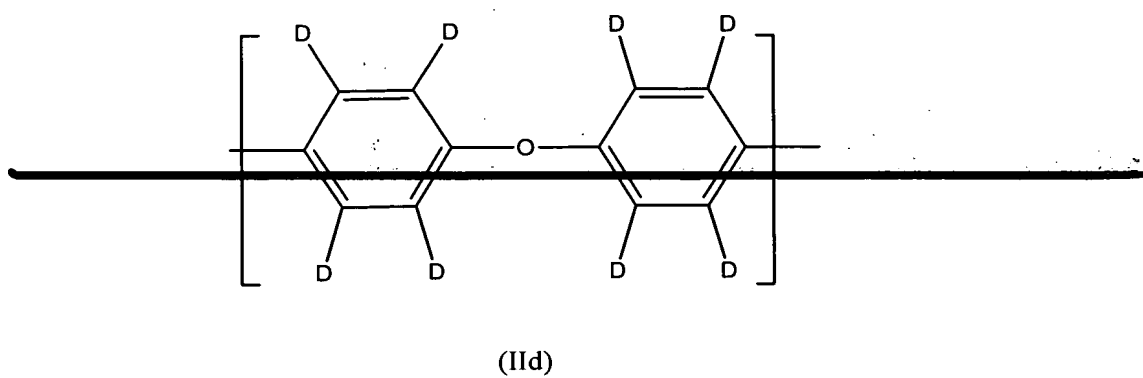
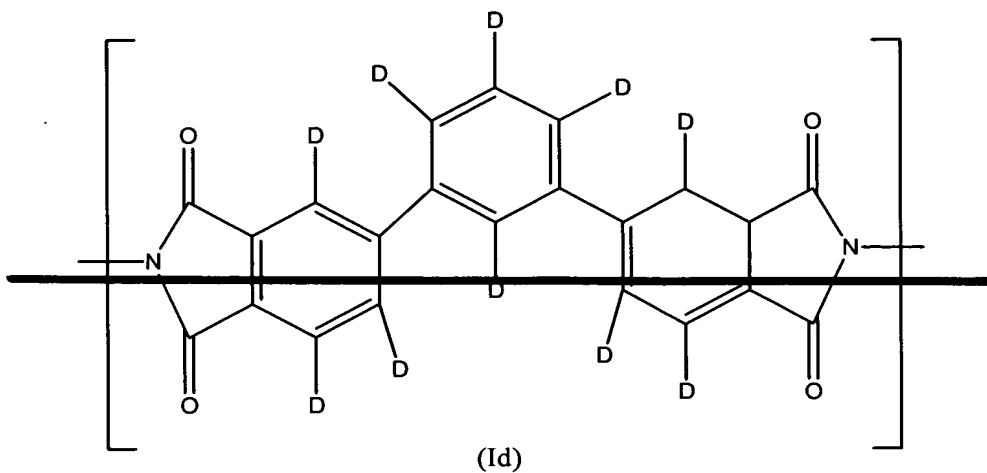


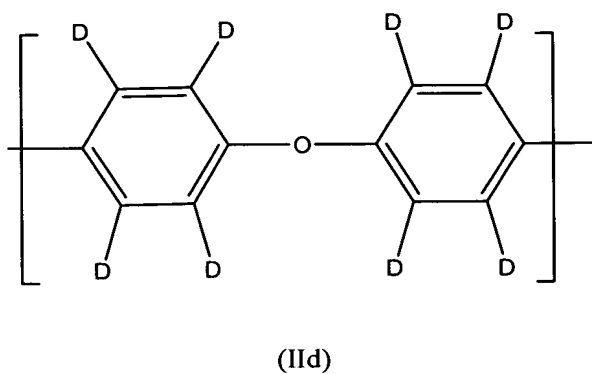
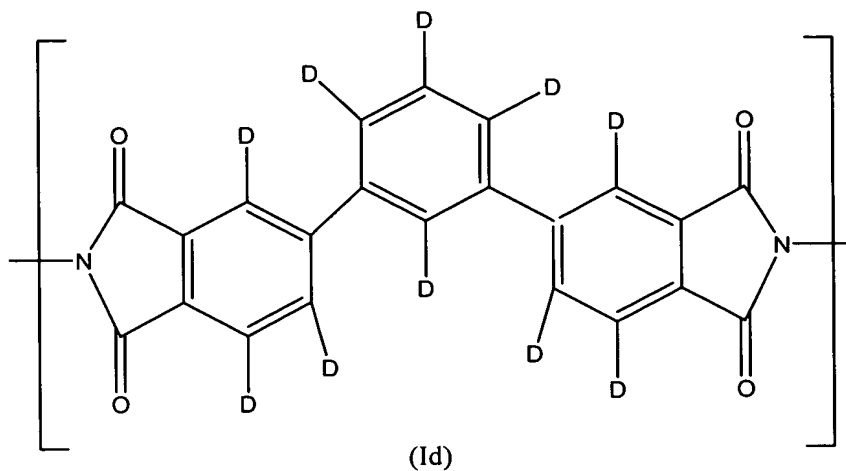
(Ic)



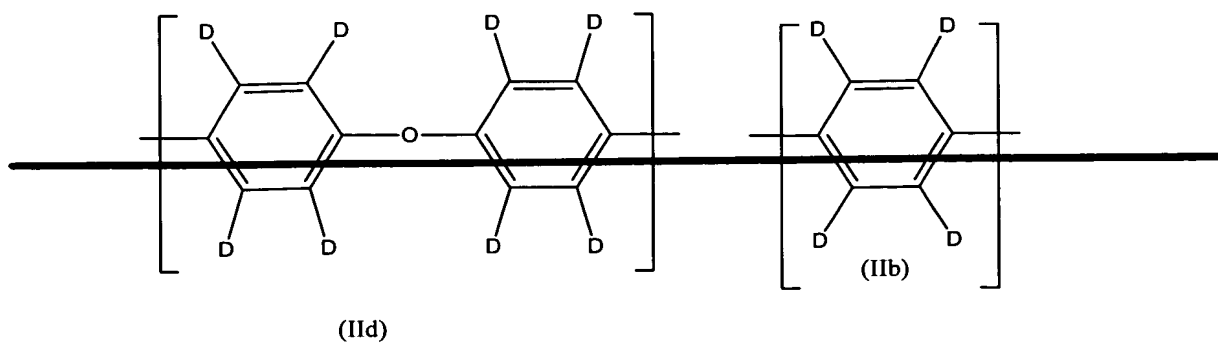
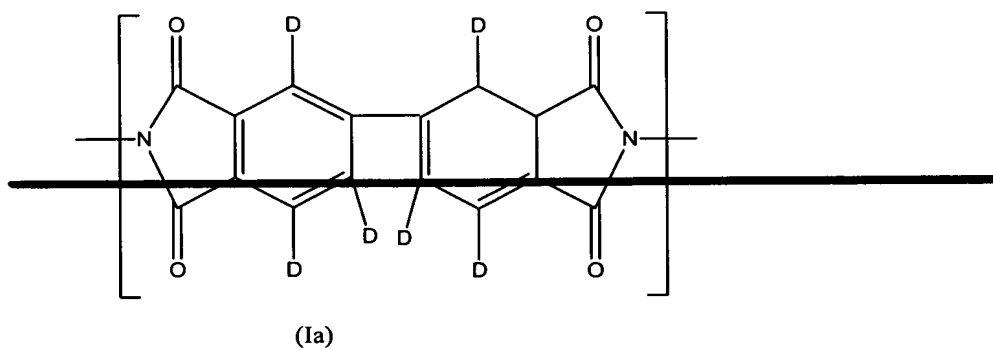
(IIId)

- polyimides comprising a repeat unit of following formula (Id) and a repeat unit of following formula (IIId):

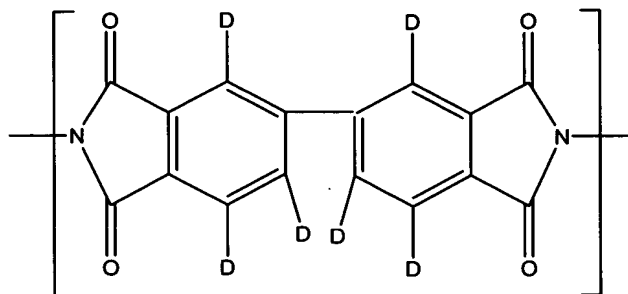




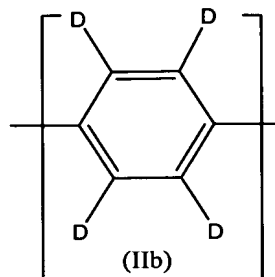
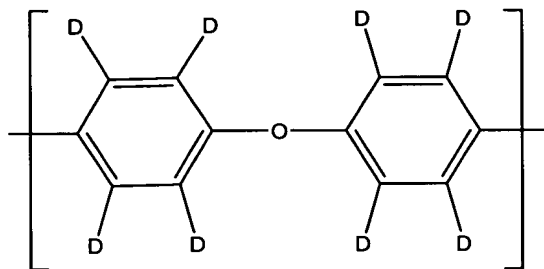
- polyimides comprising a repeat unit of following formula (Ia), a repeat unit of following formula (IIb) and a repeat unit of following formula (IIId):



(IIb)



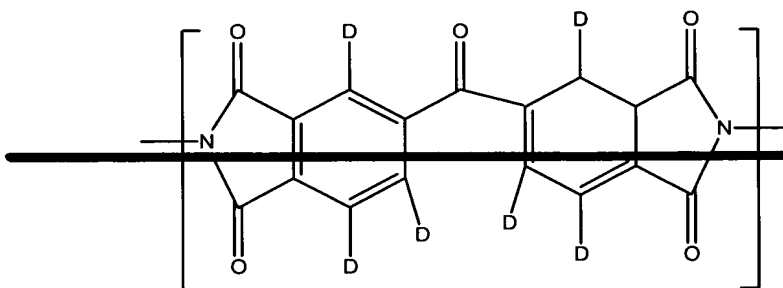
(Ia)



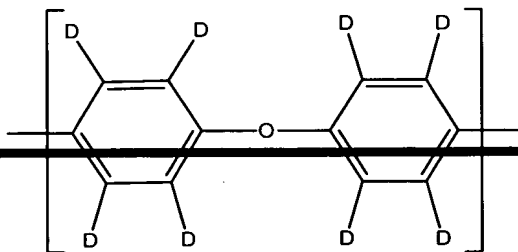
(IIb)

(IIc)

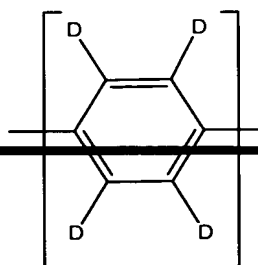
- polyimides comprising a repeat unit of following formula (Ic), a repeat unit of following formula (IIb) and a repeat unit of following formula (IIc):



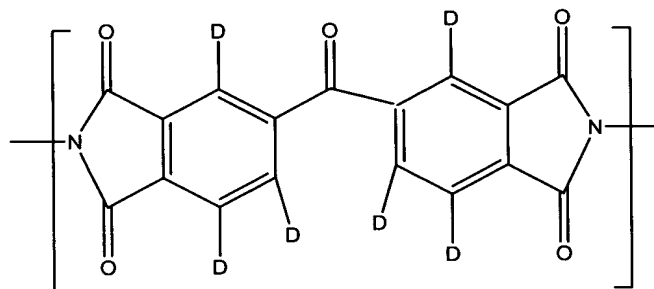
(Ic)



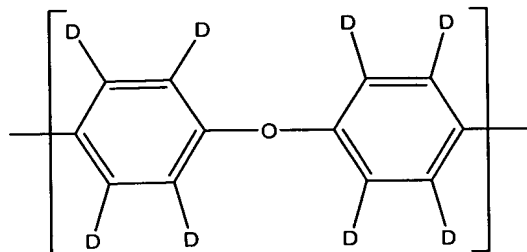
(IIc)



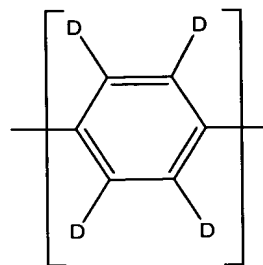
(IIb)



(Ic)



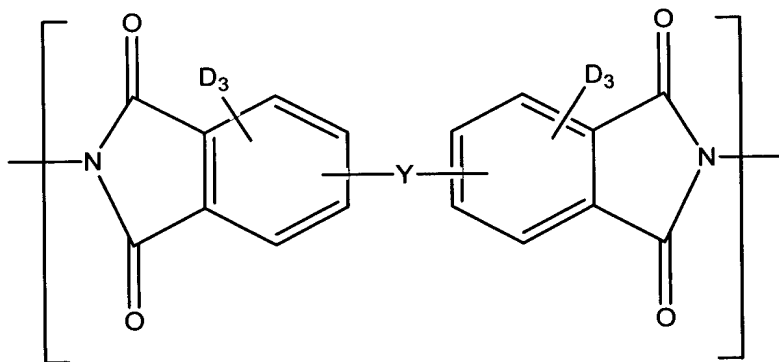
(IIId)



(IIb)

Claim 19 (previously presented) A material which is transparent within the region from 2500 to 3500 cm^{-1} comprising a deuterated polyimide, the backbone of which comprises an alternation between:

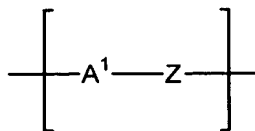
- at least one repeat unit corresponding to the following formula (I):



(I)

in which:

- Y represents a single bond or a spacer group; and
- at least one repeat unit corresponding to the following formula (II):



(II)

in which:

- A¹ represents a perdeuterated aromatic group comprising from 6 to 10 carbon atoms; and
- Z represents a single bond or a group chosen from -O-C₆D₄-, -CO-C₆D₄- and -C₆D₄-.